

eMethods

Diagnostic Assessments

Subjects were administered semi-structured interviews by clinicians (Ph.D. clinical psychologists or advanced-level clinical psychology doctoral students) who completed a rigorous training program supervised by Salvatore Mannuzza, Ph.D., and who demonstrated high reliability on all major disorders of interest on the following instruments. Our diagnostic assessments combined standard instruments and a detailed examination of ADHD symptoms. Axis I DSM-IV disorders such as Mood, Anxiety, and Psychotic Disorders were assessed with the Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Non-Patient Edition (SCID-I/NP).¹ Because of the importance of characterizing substance use and abuse in detail, we incorporated relevant sections from the Psychiatric Research Interview for Substance and Mental Disorders Version 6.0 (PRISM).² We designed a novel component for this study which specifically assesses ADHD symptoms, the Assessment of Adult Attention-Deficit/Hyperactivity Disorder (AAA; Mannuzza, Klein, Castellanos, unpublished; see eInstrument, below).

All interviewers were blind to subject group (probands, controls), past history (i.e., data from previous follow-ups, and from childhood), and study hypotheses. Interviewers wrote comprehensive clinical narratives that were reviewed for diagnostic accuracy and completeness. Based on 75 interviews diagnosed independently by Dr. Mannuzza from audio recorded interviews and narratives, chance-corrected reliability kappas were as follows: ADHD: 0.95 (ranging from 0.88 to 1.00, depending on the DSM-IV subtype); Antisocial Personality Disorder: 0.84; Alcohol Substance Use Disorder: 0.96; non-alcohol Substance Use Disorder: 0.97; Mood Disorders: 0.79; Anxiety Disorders: 0.96; and any DSM-IV disorder: 0.92.

Neurological Disorders

At follow-up all participants were queried about intervening medical or neurological disorders, and none reported traumatic or other brain injury. At study enrollment, probands were evaluated neurologically and neurological disorders were explicit exclusions. Further, at FU41 (the most recent wave of data collection), Probands and Comparisons did not differ significantly in rates of neurological conditions in adulthood (convulsive disorders, repeated headaches, etc. – data not shown).

ADHD Not Otherwise Specified (ADHD-NOS)

Subjects diagnosed as having ADHD-NOS did not meet full DSM-IV criteria but they had to meet the impairment criterion and the exclusion criteria. For example, if a subject reported experiencing 4 of 9 clinically impairing, inattentive behaviors that were creating problems at home and at work, and that were not explained by another disorder, the diagnosis of ADHD-NOS was applied.

ADHD in Remission

To receive a diagnosis of ADHD-NOS, subjects had to fulfill the DSM-IV ADHD Impairment Criterion. If they did not (i.e., if their ADHD behaviors did not impair their functioning), then they were considered remitted. So, for example, a person reporting difficulty sustaining attention at work "occasionally," and that his wife "sometimes" remarked that he wasn't paying attention, but that these behaviors did not have negative functional impact (e.g., they did not represent a major problem at work, never substantially affected the subject's occupational performance, didn't result in repeated arguments with his wife), would be considered remitted if he also denied impairment related to all other ADHD behaviors (distractibility, disorganization, forgetting, etc.). In summary, remitters were defined by the absence of clinically significant impairment while ADHD-NOS was defined by the presence of clinically significant impairment without meeting full DSM-IV-TR criteria.

eText – Possible Relationship between Oppositional Defiant Disorder and Conduct Disorder Symptoms and Cortical Thickness

Oppositional Defiant Disorder (ODD) did not exist as diagnostic entities when this study was initiated in 1970. However, we have teacher ratings that are relevant. The Conners Teacher Rating Scale (CTRS) includes 4 items that correspond to DSM-IV ODD behaviors: temper outbursts, defiant, quarrelsome, and disturbs other children. Each item was rated on a 4-point scale: 0-Not at all, 1-Just a little, 2-Pretty much, 3-Very much. The mean (SD) of these items for the 59 probands with MRI data was .49 (.67). Based on these ratings, it is likely that at least some subjects would have been diagnosed as ODD had the DSM-IV criteria

been available at the time. The Pearson correlation between those ratings and cortical thickness in the 59 probands was $r=-0.02$, $p=0.85$. By contrast, the CTRS includes 4 items that correspond to DSM-IV CD behaviors: destructive, steals, lies, and truancy. The mean (SD) of these items for the 59 probands with MRI data was 0.60 (.56), i.e., between Not at all and Just a little. This supports that CD symptoms were extremely low in the probands recruited into the study. The Pearson correlation between CD ratings and cortical thickness in the 59 probands was $r=0.10$ $p=0.42$. Thus, we did not find evidence in support of either surrogate measures of ODD or CD as likely origins of our principal results.